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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/180,601 11/10/98 OSHITA

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WENDEROTH LIND & PONACK
2033 K STREET NW SUITE 800
WASHINGTON DC 20006

IM62/0323

EXAMINER

DOROSHENK, A

ART UNIT

PAPER NUMBER

1764

3

DATE MAILED:

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/180,601

Applicant(s)
Oshita et al

Examiner
Alexa Doroshenk

Group Art Unit
1764



☒ Responsive to communication(s) filed on Aug 16, 1999

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle* 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-10 is/are pending in the application

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-10 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the temperature" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the temperature" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: "a freboard" and any other recited structural limitation.

Claim 2 recites the limitation "the combustibles" in lines 15-16. There is insufficient antecedent basis for this limitation in the claim.

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Claim 2 recites the limitation "the furnace bottom" in line 23. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the mass flow of said first fluidizing gas" in line 27. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the mass flow of said second fluidizing gas" in line 28. There is insufficient antecedent basis for this limitation in the claim.

The term "smaller" in claims 2-3 and 9-10 is a relative term which renders the claim indefinite. The term "smaller" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 2 recites the limitation "the fluidized medium" in line 1, page 41. There is insufficient antecedent basis for this limitation in the claim.

The term "intensely" in claims 2-3 and 10 is a relative term which renders the claim indefinite. The term "intensely" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 2 recites the limitation "the temperature of the fluidized bed" in line 12, page 41. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the temperature of the freeboard" in lines 12-13, page 41. There is insufficient antecedent basis for this limitation in the claim.

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Claim 3 recites the limitation "the fluidizing gas" in line 27, page 41. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "said central region" in line 1, page 42. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "the furnace bottom" in line 1, page 42. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "the mass flow of said central fluidizing gas" in line 6, page 42. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "the mass flow of said peripheral fluidizing gas" in lines 6-7, page 42. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "one of said central and peripherals.... the other of said central and peripheral areas of the furnace" in lines 9-12, page 42. There is insufficient antecedent basis for this limitation in the claim. Only one central and peripheral area was previously recited.

Claim 8 recites the limitation "the fluidized bed temperature" in lines 10-11. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the freeboard temperature" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "said freeboard" in line 14. There is insufficient antecedent basis for this limitation in the claim.

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Claim 8 recites the limitation "said fluidized bed" in 15. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the amount of air" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the fluidized medium" in line 7. There is insufficient antecedent basis for this limitation in the claim.

In claim 10, the Examiner finds lines 27, page 45- line 2, page 46 unclear.

Claim 10 recites the limitation "the other of said central and peripheral furnace bottoms" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the amount of air" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the fluidized medium" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the air" in line 14. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the amount of air" in lines 23-24. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the fluidized medium" in line 25. There is insufficient antecedent basis for this limitation in the claim.

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Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama et al (5,620,488) in view of Japanese document 5-23321.

With respect to claim 1, Hirayama et al disclose a method for gasifying combustibles with a heat recovery region (118) and a combustible region (G) and (S) in a fluidized-bed furnace (1) with a freeboard (102) and temperature control (col. 10, lines 37-46) but are silent as to controlling the freeboard temperature.

Japanese document 5-23321 demonstrates wherein temperature detector (91) and controller (92) control the temperature throughout the system, including the freeboard. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the temperature detector and controllers of 5-23321 in the system of Hirayama et al since temperature control has been shown as an effect operating means in combustible gasification.

With respect to claim 8, Hirayama et al disclose a method for gasifying combustibles with a fluidized-bed furnace (1) with a freeboard (102) with temperature control (col. 10, lines 37-46) wherein combustible gas and fine particles generated are delivered from the freeboard (102) to a

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melt combustion furnace (col. 5, lines 53-55 and col. 6, lines 49-52) but are silent as to controlling the freeboard temperature.

Japanese document 5-23321 demonstrates wherein temperature detector (91) and controller (92) control the temperature throughout the system, including the freeboard. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the temperature detector and controllers of 5-23321 in the system of Hirayama et al since temperature control has been shown as an effect operating means in combustible gasification.

5. Claims 2-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama et al in view of Japanese document 5-23321 as applied to claim 1 above, and further in view of Japanese document 7-56362.

With respect to claims 2-3, the modified method of Hirayama et al disclose all of the method as described in claim 1 above, including a first and second fluidizing gas (7) and (8) are supplied as an upward flow through the furnace so that a moving bed (9) descends and the combustibles are gasified (G) while circulating together (see fig. 1 and 3). Modified Hirayama et al also disclose wherein the furnace is circular in cross-section with the heat recovery region on the periphery and the combustion region in the center (col. 5, line 62- col. 6, line 18) but are silent as to a partition wall.

Japanese document 7-56362 discloses wherein a partition wall (58) is included to separate a heat recovery region and combustion region of a furnace wherein the upper and lower portions of the regions are connected (see fig. 5 and col. 15, line 33- col. 16, line 16). It would have been

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obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of 7-56362 in the modified system of Hirayama et al in order to add flow control means to further promote the necessary flow of materials in the apparatus.

With respect to claims 4-7, Hirayama et al disclose wherein temperature is controlled in the moving bed through the combustion and heat recovery regions (col. 10, lines 36-46). With respect to the limitations of "main temperature control" and "auxiliary temperature control" of the instant claims, the mere fact that a given structure is integral does not preclude its consisting of various elements since the same operation would be achieved.

Also with respect to claims 4-7, Japanese document 5-23321 further demonstrates the effectiveness of controlling the temperature throughout the apparatus through several separate tubing means (see fig. 15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to separate the temperature control means in the modified method of Hirayama et al in order to provide additional operational control means.

With respect to claims 9 and 10, Hirayama et al disclose a gasifying furnace comprising: a fluidized bed furnace (1) an air diffusion device (7) and (8) at the bottom of the furnace, heat recovery region (118), combustion region (G) and (S), and a moving bed (9). Hirayama et al are silent as to a partition wall and a heat transfer surface.

Japanese document 7-56362 discloses the use of a partition wall (58) in a furnace which allows the upper and lower portions of the regions to be connected. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the partition